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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
NGUYEN, DUSTIN

ART UNIT	PAPER NUMBER
2154	10

DATE MAILED: 03/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/261,621	VAHALIA ET AL.	
	Examiner	Art Unit	
	Dustin Nguyen	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1 – 50 are presented for examination.

2. Examiner requests Applicants to update status of any related applications as mentioned in specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-8, 11-20, 27, 30-35, 42-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al. (US Patent No 6088694), in view of Bennett et al. (US Patent No 5852747).

5. As per claim 1, Burns discloses [illegible]y the invention substantially as claimed including a method of operating a file server in a data network, said method comprising:

the file server receiving a request for metadata about a file to be accessed, the request being received from a data processing device in the data network [col 1, lines 43-57 and col 7, lines 33-42]; and

returning to the data processing device metadata of the file including information specifying data storage locations in the file server for storing data of the file [col 9, lines 31-37 and col 1, lines 57-59].

Burns does not disclose in response to the request for metadata, the file server granting to the data processing device a lock on at least a portion of the file, and returning to the data processing device metadata of the file.

Bennett discloses in response to the request for metadata [col 1, lines 20-27], the file server granting to the data processing device a lock on at least a portion of the file [first data block] [Abstract, lines 12-14; col 1, lines 27-37 and col 4, lines 24-27].

It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Burns and Bennett because Bennett's granting a lock would preserve the integrity of the file by granting only lock to portion of the file to prevent unauthorized access.

6. As per claim 2, Burns discloses the file server includes

a data storage device including the data storage locations [14, 19, Figure 1], and

a data mover computer for managing locks on files having data stored in said data storage device [12, Figure 1],

wherein the data storage device stores metadata of a plurality of files having file data stored in the data storage device [18, Figure 1 and col 7, lines 15-17],

the data mover computer is coupled to the data storage device for transfer of the metadata between the data storage device and the data mover computer [40, 41, 42, Figure 1 and col 7, lines 44-55],

the data mover computer has a random access memory [col 8, lines 9-12]; and

the method includes the data mover computer maintaining a metadata cache in the random access memory, and the method includes the data mover computer accessing the metadata cache for obtaining the metadata that is returned to the data processing device [col 1, lines 44-59].

7. As per claim 3, Burns does not disclose discloses the method as claimed in claim 1, wherein a plurality of data processing devices in the data network share read-write access to the file, and the file server grants respective read locks and write locks to the data processing devices in the data network Bennett discloses a plurality of data processing devices in the data network share read-write access to the file, and the file server grants respective read locks and write locks to the data processing devices in the data network [col 4, lines 8-29]. At the time the invention was made, it would have been obvious to a person skill in the art to combine Burns and Bennett because it would allow data to keep its integrity and consistency in data network communication.

8. As per claim 4, Burns does not disclose the data processing device writes data to the data storage locations in the file server, modifies the metadata from the file server in accordance with the data storage locations in the file server to which the data is written, and sends the modified metadata to the file server. Bennett discloses the data processing device writes data to the data

storage locations in the file server, modifies the metadata from the file server in accordance with the data storage locations in the file server to which the data is written, and sends the modified metadata to the file server [update] [col 4, lines 23-38]. At the time the invention was made, it would have been obvious to a person skill in the art to combine Burns and Bennett because it would allow data to keep its integrity and consistency in data network communication.

9. As per claim 5, Burns does not disclose the data processing device sends the modified metadata to the file server after the data processing device writes the data to the data storage of the file server. Bennett discloses the data processing device sends the modified metadata to the file server after the data processing device writes the data to the data storage of the file server [complete] [col 4, lines 31-33]. At the time the invention was made, it would have been obvious to a person skill in the art to combine Burns and Bennett because it would allow data to keep its integrity and consistency in data network communication.

10. As per claim 6, Burns discloses the data processing device has a cache memory for caching the metadata of the file including a version identifier associated with the metadata of the file, and wherein the data processing device includes the version identifier in the request for access to the file, the file server compares the version identifiers from the data processing device to a version identifier of a most recent version of the metadata of the file, and the file server returns the most recent version of the metadata of the file to the data processing device when the comparison of the version identifiers from the data processing device to the version identifier of the most recent version of the metadata of the file indicates that the metadata of the file cached in

the cache memory of the data processing device is not the most recent metadata of the file [col 2, lines 36-40, col 3, lines 17-21 and col 14, lines 25-33].

11. As per claim 7, Burns discloses the version identifier is a number that is incremented when the metadata of the file is modified [col 14, lines 56-col 15, lines 3].

12. As per claim 8, it is rejected for similar reasons as stated above in claim 1. Furthermore, Burns discloses:

the client receiving from the file server the metadata of the file, using the metadata of the file to produce at least one data access command for accessing the data storage locations in the file server, and sending the data access command to the file server to access the data storage locations in the file server [col 9, lines 1-6]; and

the file server responding to the data access command by accessing the data storage locations in the file server [col 9, lines 59-col 10, lines 4].

13. As per claim 11, it is rejected for similar reasons as stated above in claim 3.

14. As per claim 12, Burns discloses the lock on at least a portion of the file granted by the file server to the client is not granted to any particular application process of the client, and wherein the client has a lock manager that grants a local file lock to a particular applications process that accesses the file [col 9, lines 10-15; and 28, Figure 1].

15. As per claim 13, Burns discloses the client has a lock manager that responds to a request from an application process of the client for access to the file by granting to the application process a local file lock on at least a portion of the file, and then sending to the file server said at least one request for access to the file [col 9, lines 22-38].

16. As per claim 14, Burns discloses the method includes dynamically linking application programs of the client with input-output related operating system routines of the client, the input-output related operating system routines intercepting file access calls from client application processes to send file access requests to the file server to obtain from the file server locks upon at least a portion of each of the files, to obtain metadata for producing data access commands for accessing data storage in the file server, to produce the data access commands from the metadata, and to send the data access commands to the file server in order to access the data storage of the file server [26, 27, Figure 1].

17. As per claims 15 and 16, they are rejected for similar reasons as stated above in claims 4 and 5.

18. As per claim 17, Burns discloses the client performs asynchronous write operations upon the data storage locations of the file server, and wherein the client sends the modified metadata to the file server in response to a commit request from an application process of the client [update operation] [col 11, lines 64-col 12, lines 10].

19. As per claim 18, Burns discloses the client performs asynchronous write operations upon the data storage locations of the file server, and wherein the client sends the modified metadata to the file server when the client requests the file server to close the file [col 4, lines 43-46].

20. As per claim 19, it is rejected for similar reasons as stated in claim 6.

21. As per claim 20, it is rejected for similar reason as stated in claim 7.

22. As per claim 27, it is apparatus claimed of claim 8, it is rejected for similar reasons as stated above in claim 8.

23. As per claims 30-34, they are apparatus claimed of claims 11-15, it is rejected for similar reasons as stated above in claims 11-15.

24. As per claim 35, it is apparatus claimed of claim 19, it is rejected for similar reasons as stated above in claim 19.

25. As per claim 42, it is apparatus claimed of claim 8, it is rejected for similar reasons as stated above in claim 8.

26. As per claims 43-49, they are rejected for similar reasons as stated above in claims 13-19.

27. As per claim 50, it is rejected for similar reasons as stated above in claims 1-5.

28. Claims 9, 10, 21-26, 28, 29, 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al. (US Patent No 6088694) in view of Bennett et al. (US Patent No 5852747), and further in view of Huang et al. (US Patent No 5764949).

29. As per claim 9, it is rejected for similar reasons as stated above in claims 1 and 2. Furthermore, Burns and Bennett do not disclose the client sends the data access command to the data storage device over a data transmission path that bypass the data mover computer. Huang discloses the client sends the data access command to the data storage device over a data transmission path that bypass the data mover computer [Abstract]. It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Burns, Bennett and Huang because Huang's transmission path that bypass the data mover computer would provide a faster and more efficient way for client to access data inside the data storage and to reduce network traffic.

30. As per claim 10, it is rejected for similar reasons as stated above in claim 3.

31. As per claim 21, it is apparatus claimed of claims 8 and 9, it is rejected for similar reasons as stated above in claims 8 and 9. Furthermore, Burns and Bennett does not disclose the data mover computer having at least one network port for exchange of control information and metadata of files in the file system with data processing devices in the data network. Huang discloses the data mover computer having at least one network port for exchange of control information and metadata of files in the file system with data processing devices in the data

network [interface module] [106, Figure 1]. It would have been obvious to a person skill in the art at the time the invention was made to combine the teaching of Burns, Bennett and Huang because Huang's network port would provide proper protocol for data to communicate between multiple machines.

32. As per claims 22-24, they are apparatus claimed of claims 9-11, they are rejected for similar reasons as stated above in claims 9-11.

33. As per claims 25 and 26, they are apparatus claimed of claims 6 and 7, they are rejected for similar reasons as stated above in claims 6 and 7.

34. As per claim 28, it is rejected for similar reasons as stated above in claim 21.

35. As per claim 29, it is apparatus claimed of claim 10, it is rejected for similar reasons as stated above in claim 10.

36. As per claims 36-41, they are rejected for similar reasons as stated above in claims 21-26.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dustin Nguyen whose telephone number is (703) 305-5321. The examiner can normally be reached on Monday – Friday (8:00 – 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (703) 305-9678.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directly to the receptionist whose telephone number is (703) 305-3900.

Dustin Nguyen

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